

APPENDIX F - Preparation Guidelines for Noise Barrier Scope Summary Report

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APPENDIX F - Preparation Guidelines for Noise Barrier Scope Summary Report

ARTICLE 1 - Overview

Application

The Noise Barrier Scope Summary Report (NBSSR) is used only for retrofit noise barrier projects in the Community Noise Abatement Program and for School Noise Attenuation projects funded in the SHOPP. Its intent is to tie down costs and schedules for programming, once the scope of a project is known.

NBSSR is Considered a PSR and Also a PR With Required Attachments

If a Noise Study Report and an Environmental Document are attached, the NBSSR is considered to be the Project Report and gives project approval. Without these attachments the NBSSR is considered to be a Project Study Report (PSR), and a Supplemental NBSSR or a PR will be required upon completion of the Noise Study Report and the Environmental Document. This Supplemental NBSSR would describe any changes in the original concept as a result of completing the noise and environmental studies.

The following instructions and comments, as well as Chapter 9, Article 9, and Chapter 30, identify concerns and considerations to be reviewed and discussed during preparation of the NBSSR. These instructions supplement the information in Chapter 1100 of the *Highway Design Manual*. Where the responses to questions are basically self explanatory, there are no comments or notes.

ARTICLE 2 - Item-by-Item Guidelines for NBSSR Form

Note: If an item in the suggested format is not applicable to the project, it should be noted "Not Applicable" to identify that it was considered and not just overlooked.

Cover Sheet

All NBSSRs should have a standard cover sheet to provide project identification information and signatures. Information to be provided includes the following:

- Title

Indicate "Noise Barrier Scope Summary Report".

- District-County-Route-Kilometer Post (Post Mile) [Dist-Co-Rte-KP(PM)]

The Kilometer Post should be given to the nearest 0.1 kilometer; if the project is 0.2 kilometers or more in length, give both the beginning and ending Kilometer Posts. Post Miles should follow Kilometer Posts if needed for continuity of file references or other reasons.

- Responsible Unit (RU)

The unit source code of the registered civil engineer in charge of the technical features of the project.

- Expenditure Authorization (EA)

The multiphase EA, using the "0" phase for the project.

- Program Identification

The program codes as given in the programming document or the project scheduling plan indicating the kind of work involved; i.e. SW-HB311. Refer to Chapter 4.

- On Route ____ From ____ To ____

A brief written description of the project limits that corresponds to the Kilometer Posts given above and ties the limits to commonly known physical features on the ground that can be identified on available mapping.

- Vicinity Map

A small map showing the project limits consistent with the brief description and Kilometer Posts, and a north arrow. The map should be sufficient to locate the project at a glance for a person unfamiliar with the project. It should show the features used to identify the project limits such as roads, streams, junctions or railroads, and the nearest town (unless too distant), and a note indicating the direction to and name of the next town in each direction.

- Right of Way Statement

A statement signed by the District Division Chief Right of Way indicating the review of the right-of-way information contained in the NBSSR and the R/W data sheet attached to it and a finding that the data is complete, current and accurate.

- Recommended Approval

The recommendation for approval signed by the Project Manager as an indication that all necessary studies have been included.

- Approval

The approval of the NBSSR recommendations, signed and dated by the District Director or by a District Division Chief to whom that authority has been officially delegated. The date of signing becomes the official PSR approval date and if the noise study and the environmental document or CE are attached, the project approval and environmental compliance date.

Registered Civil Engineer's Stamp and Statement

The second page of the NBSSR contains the required stamp or seal and signature of a registered civil engineer who is the person in responsible charge. The page must include a statement indicating that the registered civil engineer attests to the technical information contained therein and the engineering data upon which recommendations, conclusions, and decisions are based. Approval of the NBSSR is a management decision and is separate from this technical signature of the person in responsible charge.

1. INTRODUCTION

Complete this section in accordance with the instructions in this manual for a Project Report.

Also indicate whether this replaces the Project Study Report only or also replaces the Project Report.

2. BACKGROUND

A. Funding

Under funding, include pertinent data. If another agency is providing funding, provide the details on the source and expected construction and payback years. Add detailed information for the Cooperative Agreement in Section 4.J. "Funding and Staffing".

Indicate if locally funded projects will anticipate eventual payback and if they will be made eligible for federal reimbursement through Advance Construction procedures.

B. Public Involvement

- (2) Under Public Involvement, indicate whether meetings with city/county or neighborhood groups have been held or are planned. Consultation with the City/County Fire Marshal pertaining to fire hose openings and emergency personnel access gates should be included.
- (3) Commitments as to specific locations, or noise barrier types or design should not be made prior to preparation of the NBSSR. However, if they have been, add a discussion of what they are and why they were made prior to completion of this Report.

C. Project Priority

Include the project's Priority Index Number as well as information regarding its priority on any statewide list and on the district's list.

3. DESIGN INFORMATION

A. Existing Facility

- (1) The existing facility should be shown on typical cross sections which relate to the proposed work. Prior to making the typical cross sections, the recommendations under Section 4.D. "Noise Study Recommendations" should be considered so that the typical sections can be used to describe both the existing cross section and the proposed noise barrier locations.

Describe any unusual conditions which might not be clear on the typical. If the noise barrier will be placed adjacent to a shoulder, add the shoulder details to the typical cross sections. If the proposal includes placing a noise barrier on a structure, complete a typical cross-section(s) for the structure(s) impacted.

- (2) Right of Way Considerations

If the noise barriers will be at or adjacent to the right of way line, it is important to note adjacent property fence types, construction easement needs, access needs for maintenance, disposal of existing fences, access to fire hydrants, and provisions for emergency personnel access gates.

- (4) Field Review

Describe the results of the field review by district personnel.

- (5) Noise Study

A noise study is required before this Report is considered a Project Report. The datum reference for the noise barrier height must be clearly stated. For instance, if the reference datum is the edge of traveled way (ETW) and the noise barrier is placed on the right of way line, the designers must make appropriate noise barrier height adjustments for intervening cuts or fills.

4. PROPOSAL

Describe the proposed project in detail in this section.

A. Description

Describe any unusual conditions that might not be clear on the typicals such as required safety shape barriers, shoulder extensions, or curb removal. Discuss these factors as appropriate for this project.

B. VA Study

Describe the results of the Value Analysis studies. If a Value Analysis study was/will not be done, this section should discuss why not and outline what materials, methods, or procedures have been considered to reduce costs.

C. Acceptable Noise Barrier Materials

Describe all acceptable alternative wall types; on a concrete barrier and on a structure railing there are currently only two acceptable alternatives.

D. Noise Study Recommendations

Noise Barrier Segments – Divide the noise barrier into sufficient segments to categorize and capture the types of work. Groupings by noise barrier height, base and foundation type are suggested. Two examples follow:

- sta. 2/5, 300m, 4270mm wall, NB shoulder, safety shape base
- sta. 4+60/8+20, 360m, 4270mm wall, NB R/W

Overlapping noise barriers must be considered if noise barriers are offset. Noise barrier limits must be tied to an easily locatable engineering feature (e.g., an engineering station) not just a property name. Include these details on a typical cross-section(s). In this table show the actual noise barrier height to be constructed as defined in *Highway Design Manual* Chapter 1100: Pay Quantities. This may differ from the datum height referenced in the noise study especially if the noise barrier location has been moved laterally along a slope.

E. Noise Barrier Foundation

Foundation Investigations – State whether the noise barriers can be placed on standard foundations or if conditions such as high ground water, poor soil strength, steep slopes or other unusual ground conditions or physical obstructions require special foundation design by the Division of Structures. If preliminary site information indicates unusual conditions will be encountered, describe them here.

F. Design Details

This section provides a reminder list of types of work that are sometimes encountered on noise barrier projects. Narrative should be added to describe any unusual conditions or factors that must be considered during design and construction, including the following:

- Utilities
- Drainage facilities
- Bridgework
- Traffic impacts

- Sight distance
- Horizontal clearance
- Highway Planting (See Chapter 30)

G. Nonstandard Design Features

Document approval of any exceptions to Mandatory Design Standards, giving appropriate data.

H. Cost Estimate

Summarize the Capital Outlay costs here. A detailed PR Cost Estimate (See Chapter 20 and Appendix AA) must be included (if there is no Categorical Exemption/Exclusion or Noise Study, use a PSR Cost Estimate) in the Attachments as a backup for the cost information presented in this section. Add Engineering costs if this is a payback project (i.e., State obligation project to be initially funded by the local agencies).

I. Analysis of Proposal

In this section, analyze the proposal. —Does it meet the aims and goals outlined in the *Highway Design Manual* (Chapter 1100)? If not, discuss why not.

J. Funding and Staffing

If a local public agency will have any responsibility for the design, construction, or funding of the project and/or if Caltrans is to commit any oversight on the project, a Cooperative Agreement will be needed outlining the responsibilities. Define the proposed responsibilities in this section. For payback projects, the engineering costs as well as capital outlay costs are eligible for reimbursement. The Cooperative Agreement should be prepared concurrently with this Report. If using other than a preapproved format, a draft should be submitted to the Design and Local Programs Program (DLPP).

Segregate the Person Years (PYs) into work done entirely by Caltrans (All by Caltrans) and those for Caltrans oversight of work done by others.

For work done entirely by Caltrans, include estimated PY effort and other support costs of project development and construction from the time the project is initially programmed through the final stages of construction. The proposed schedule should be based upon when the District realistically expects that the project would be programmed, typically in the last two years of the program. This information is not required for Minor projects.

The cost of any specialty contracts or other atypical direct project costs which may be required for the project should also be estimated by the proposed fiscal year. Do not include costs for PY estimates. The Project Management Program (PMP) will establish average dollar costs per PY for various functions, including salary, benefits, CADD usage, travel and other direct costs. Once a project is about to be programmed, these rates will be

applied to the estimated PY effort by PMP to establish the project's support budget.

K. Programming and Scheduling

Programming and Scheduling - Highlight the assumed target dates for the significant milestones on this project and include a PYPSCAN printout in the attachments.

5. OTHER CONSIDERATIONS

A. System Planning

This section should be used to outline compatibility of the noise barrier project with future plans for the route or other projects in the vicinity.

B. Hazardous Wastes

Give the results of any hazardous waste investigation.

C. Traffic Control

Any Transportation Management Plan coordination with other project should be discussed here.

6. PROJECT REVIEWS

- HQ Program Advisor

Headquarters Program Advisor review is not normally required; however, the project should be discussed with the Advisor if it did not appear on the Statewide Priority List. If the project is not on the Priority List, describe the results of the this discussion.

- FHWA

Describe the results of any discussion with the FHWA Transportation Engineer.

Indicate type of federal involvement, i.e., exempt, certification acceptance, or project by project.

7. ENVIRONMENTAL STATUS

Obtain the Categorical Exemption document for the noise barrier projects from the Environmental Unit and include it in the Attachments. If this project has special conditions that require a higher level environmental document, obtain this from the Environmental Unit and change the statement accordingly.

10. ATTACHMENTS

Typical cross sections shall be included as outlined in Items 3.A. "Existing Facility" and 4.D. "Noise Study Recommendations".

As noted earlier, the environmental document and Noise Study Report must be included if this report is to substitute for a Project Report.

A detailed PR Cost Estimate (PSR or DPR Cost Estimate, if appropriate) is mandatory. The standard format shall be used. Include the items appropriate for the project and eliminate those which are not appropriate (e.g., mobilization is not normally required on a noise barrier type project). The items included in the estimate should be expanded or reduced as needed to cover the various types of noise barriers, foundations, safety shape concrete barriers and related work required.



Dist - Co - Rte, KP(PM)
RU - EA
Program

NOISE BARRIER SCOPE STUDY REPORT

Vicinity Map

Show:

- Project limits
- North Arrow

On Route _____

From _____

To _____

I have reviewed the right of way information contained in this Noise Barrier Scope Summary Report and the R/W Data Sheet attached hereto, and find the data to be complete, current, and accurate:

DISTRICT DIVISION CHIEF – RIGHT OF WAY

APPROVAL RECOMMENDED:

PROJECT MANAGER

APPROVED:

DISTRICT DIRECTOR

DATE

Dist - Co - Rte, KP(PM)

This Noise Barrier Scope Summary Report has been prepared under the direction of the following registered civil engineer. The registered civil engineer attests to the technical information contained herein and the engineering data upon which recommendations, conclusions, and decisions are based.

REGISTERED CIVIL ENGINEER

DATE



NOISE BARRIER SCOPE SUMMARY REPORT

1. INTRODUCTION

A. Proposal and Limits

B. Deficiencies & Justification

C. Project Category

2. BACKGROUND

A. Funding Source (What Agency?) _____

(1) Is project in STIP (Yes/No)? _____

If Yes, Current \$ _____ FY _____

(2) Is project being advanced by local agency with costs to be paid back by State (Yes/No)? _____

Discuss:

B. Public Involvement

(1) Discuss community support and/or opposition:

(2) Discuss actual or proposed community contact about proposed noise barrier and aesthetics:

(3) Discuss any commitments to Local Agencies:

(4) Are there any unresolved issues?:

C. Project Priority

On Statewide Priority List (Yes/No)? _____

If yes, indicate Rank # _____
and Priority Index Number (PIN) _____
Attach data relative to calculation of the PIN.

3. DESIGN INFORMATION

A. Existing Facility*

(1) For each noise barrier proposed, attach a typical section which includes: barrier limits, number of lanes and lane width, side slope and side slope height.

If shoulder work is expected with this project, add: shoulder width, pavement type and curbs, if any.

If a noise barrier is to be placed on or will impact an existing structure, add a typical cross section for the proposed structure work which includes: structure name – bridge number – post mile – structure width – and shoulder width.

Discussion:

* Include as many typical sections as needed. Highlight any unusual features (e.g., drainage features, culverts, ramp metering signals, overhead signs, etc.) that are located w/in the proposed noise barrier limits.

(2) Right of Way and Fencing

Discuss right-of-way width(s) and both parallel and perpendicular fence types:

(3) Traffic Data

a. Current Year: _____

ADT _____ % Trucks _____

b. Design Year:

ADT _____ DHV _____

(4) Field Review

Date: _____

District Personnel (Name/Branch):

District Program Advisor Field Review (Yes/No)? _____

Date: _____

Others: _____ Date: _____

(5) Noise Study

Noise Study Completed (Yes/No)? _____ Date: _____

Noise Report Prepared (Yes/No)? _____ Date: _____

If one or both are NO:

Date Noise Study Ordered: _____

Date Noise Study Scheduled to be Completed: _____

Date Noise Report to be Completed: _____

If both are YES:

Datum of Noise Barrier Height Basis (ETW/R/W Line)? _____

4. PROPOSAL

A. Description:

B. Was (or will) VA Study (be) done (Yes/No)? _____

If YES: Date of Study: _____

Describe and Discuss Recommendations that will be implemented:

Describe and Discuss Recommendations that will NOT be implemented:

If NO:

Discuss why not; however, if the project includes any innovative cost reduction proposals, discuss here:

C. Acceptable noise barrier materials for proposed project:

NOTE: At least two alternative designs should be included in final project, HDM Index 1102.7.

Masonry Block (Yes/No) _____

Concrete Panel (Yes/No) _____

Plaster Composite (Yes/No) _____

Wood (Yes/No) _____

Metal, Ribbed Steel (Yes/No) _____

Composite Beam (Yes/No) _____

Other(s)* _____

*Must be approved by Division of Structures

D. Noise Study Recommendation(s):

| Wall No. | Limits * | Length | Ht.** | Direction(NB,SB,EB,WB) and Location (R/W line, shoulder or elsewhere) | Comments |
|----------|----------|--------|-------|--|----------|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

* Must tie to existing facility (Kilometer Post, Station)

** Height as defined in HDM Section 1102.7(3)

E. Noise Barrier Foundation:

- (1) Are there any locations where soil or other conditions would require nonstandard foundations (Yes/No)? _____

If YES, has a special design been requested from Division of Structures (Yes/No)? _____

- (2) Describe locations in which nonstandard foundations are required, including: Wall Number, Limits, and Foundation Type:

Are these Division of Structures Recommendation(s)? (Yes/No)? ____
If NO, explain:

F. Design Details required for project (Yes/No) _____

Pavement/shoulder rehabilitation or reconstruction _____

Drainage _____

Signs _____

Lighting _____

Utility Relocation _____

Structure Work _____

Highway Planting _____

Planting/Irrigation Modification _____

Ramp Metering _____

Other (Describe) _____

G. Are there any nonstandard design features?

Mandatory (Yes/No)? _____

If YES, date of Fact Sheet approval: _____

Discuss:

Advisory (Yes/No)? _____

If YES, date of Fact Sheet approval: _____

Discuss:

H. Cost Estimate (Attach PR Cost Estimate, or PSR or DPR Cost Estimate if appropriate)

Construction \$ _____ Right of Way \$ _____

Total \$ _____ Engineering* \$ _____

* Include for payback projects (State obligation projects to be initially funded by the local agencies)

I. Analysis of Proposal

(1) Discuss cost effectiveness (See HDM Index 1104.6):

(2) Noise Reduction

- 5 dBA reduction, minimum ? Discuss:

- 67 dBA noise level met? Discuss:

- Line of sight to Truck Exhaust Stack Intercepted? Discuss:

J. Funding and Staffing

(1) Any Cooperative Features (Yes/No)?

Discuss:

(2) Project Support:

| Proposed Program FY | District PY'S | | | Engineering Service Center PY'S | | | | | FY Total PY'S | Other Costs (\$) |
|---|------------------|-----|--------|---------------------------------|--------|-----------------|--------|----------------|---------------------|------------------------|
| | | | | Structures | | METS and Others | | Office Engr | | |
| | Design | R/W | Constr | Design | Constr | Design | Constr | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| TOTAL ESTIMATED PROJECT PY'S AND OTHER SUPPORT COSTS: | | | | | | | | | PY'S | \$* |

* Note: Dollar value of estimated specialty contracts, etc. to be shown only when applicable.

(3) Oversight Personnel Years (Caltrans) Only

Design _____

Right of Way _____

Construction _____

K. Programming and Scheduling

(1) Proposed Project Schedule (Summarize from PYPSCAN)

| Milestone | Date |
|-----------|-------|
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

(2) Proposed Budgetary Description:

5. OTHER CONSIDERATIONS

A. System Planning

- Discuss Route Concept Report for project limits:
- Discuss other proposed projects within this project's limits:

If any proposed projects include widening, add a typical cross section(s) with details as outlined under 3. A. "Existing Facility", and note programmed or anticipated construction date.

B. Hazardous Wastes (Yes/No)? _____

Has an Initial Site Assessment been completed
(Yes/No)? _____ Date: _____

Discuss:

C. Traffic Control

Transportation Management Plan (Yes/No)? _____

Any prolonged temporary ramp closures (Yes/No)? _____

Discuss:

Discuss Lane/Ramp Closure Plan (e.g., hours of allowed work):

D. In Wetlands/Floodplain (Yes/No)? _____

(If in floodplain, an evaluation of the effects of the noise barrier(s) on the floodplain must be conducted in accordance with Topic 804 of the HDM.)

Discuss:

E. Any permits required?

| Agency | Yes / No | Date Contacted | Results |
|------------------------------|----------|----------------|---------|
| Fish & Game | | | |
| Corp. of Engineers | | | |
| Coastal Commission | | | |
| BCDC (Dist. 4) | | | |
| Local flood control district | | | |
| Others: | | | |
| | | | |

F. Any Railroad(s) or Utility involvement?

Railroad(s) (Yes/No)? _____ Identify and Discuss:

Utilities (Yes/No)? _____ Identify and Discuss:

6. PROJECT REVIEWS

District Program Advisor (Yes/No)? _____ Date: _____

Headquarters Program Advisor (Yes/No)? _____ Date: _____

PD Coordinator (Yes/No)? _____ Date: _____

Geometric Reviewer (Yes/No)? _____ Date: _____

FHWA Transportation Engineer (Yes/No)? _____ Date: _____

Type of Federal Involvement _____

7. ENVIRONMENTAL STATUS

Normally these would be Categorically Exempt projects and the following statement is appropriate (obtain environmental documentation from Environmental Branch):

"The project is categorically exempt under Class 1 of the State CEQA Guidelines."

8. RIGHT-OF-WAY CERTIFICATION

Include the following certification by the District Division Chief for Right of Way or an approved designee:

"I have reviewed the right-of-way information contained in this Noise Barrier Scope Summary Report and the Right of Way Data Sheet attached hereto, and find the data to be complete, current, and accurate."

District Division Chief - Right of Way

Date

9. PROJECT PERSONNEL

| <u>Name</u> | <u>Organization/Branch</u> | <u>Phone</u> |
|-------------|----------------------------|--------------|
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |

10. ATTACHMENTS

- Location Map
- Noise Barrier Strip Map (Layouts)
- PR Cost Estimate (or PSR or DPR Cost Estimate)
- Categorical Exemption/Exclusion Form (or Draft or Final Environmental Document)
- Noise Study Report
- Typical Section(s)
- Right of Way Data Sheet
- PYPSCAN Print
- PIN Calculation Data
- Others, as appropriate